



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,351	12/11/2001	Howard G. Pinder	A-7274	8293

5642	7590	12/13/2007
SCIENTIFIC-ATLANTA, INC.		
INTELLECTUAL PROPERTY DEPARTMENT		
5030 SUGARLOAF PARKWAY		
LAWRENCEVILLE, GA 30044		

EXAMINER	
NOBAHAR, ABDULHAKIM	

ART UNIT	PAPER NUMBER
2132	

NOTIFICATION DATE	DELIVERY MODE
12/13/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOmail@sciatl.com

Office Action Summary

Application No.

10/015,351

Applicant(s)

PINDER ET AL.

Examiner

Abdulkhakim Nobahar

Art Unit

2132

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-124 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-124 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to applicants' amendment filed on 09/18/2007.
2. Claims 1-124 are pending.
3. Claims 1, 24, 38, 55, 69, 77, 83, 92, 96, 100, 105, 110, 115 and 120 are amended.
4. Applicant's arguments have been fully considered but they are not persuasive.
5. When responding to the Office action, Applicant is advised to clearly point out the patentable novelty the claims present in view of the state of the art disclosed by the reference(s) cited or the objection made. A showing of how the amendments avoid such references or objections must also be present. See 37 C.F.R. 1.111(c).

Response to Arguments

1. Applicants argue that: "wherein the third (or second) ciphertext packet is decryptable with a single decryption block."

Examiner respectfully disagrees and asserts that Rabowsky discloses that the control word (i.e., the encryption key) created by the control access system (see col. 6, lines 52-56 and col. 7, lines 2-4) is sent to the decryptor (see col. 10, lines 7-10 and lines 47-58) of the receiving device to decrypt the encrypted data stream (see col. 3, line 62-col, 4, line 15). Thus, the decryption of the encrypted data streams provided to the users is performed by the user receiving device at one place and one time.

2. Examiner, however, in light of the above submission maintains the previous rejections while considering the amendments to the claims 1, 24, 38, 55, 69, 77, 83, 92, 96, 100, 105, 110, 115 and 120 as follows:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 24, 38, 55, 69, 77, 83, 92, 100, 105, 110, 115 and 120 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. These claims include a new limitation that recites wherein the third (or second) ciphertext packet is decryptable with a single decryption block. The specification of the instant application does not provide any description for this statement and the applicants have not pointed out any location of the specification to support it. For the sake of examination, examiner assumes that the new limitation in the independent claims that the decryption of the ciphertext programming is performed at one location by one device (i.e., user subscriber unit).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-124 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabowsky (6,141,530) in view of Bartholet et al (2002/0114453 A1).

Regarding claims 1, 24, 38, 50, 55, 58, 69, 77, 83, 92, 100, 105, 110, 115 and 120, Rabowsky discloses:

receiving from a headend of the subscriber network a first ciphertext packet at the receiver (see, for example, col. 2, lines 27-46; col. 3, lines 33-35; col. 4, lines 21-32; col. 8, lines 51-62);

an input port adapted to receive a first key and a first ciphertext of the encrypted programming, wherein the first ciphertext packet has a single layer of encryption thereon that was applied by a first cryptographic algorithm using the first key (see, for example, Fig. 2; col. 4, lines 21-32; col. 8, lines 51-62; col. 10, lines 1-11);

a key generator adapted to generate a key (see, for example, col. 6, lines 52-56; col. 9, line 65-col. 10, line 10);

a storage device in communication with the cryptographic device adapted to store the ciphertext packet and the keys (see, for example, col. 8, lines 51-62; col. 10,

lines 12-25); a cryptographic device in communication with the input port and the key generator (see, for example, col. 9, lines 3-11; col. 9, lines 43-45; col. 9, line 65-col. 10, line 10); and

wherein the third (or second) ciphertext packet is decryptable with a single decryption block (see col. 6, lines 52-56; col. 7, lines 2-4; col. 10, lines 7-10 and lines 47-58).

Rabowsky, however, does not expressly disclose a scheme to use cryptographic algorithms to apply further encryption to the incoming encrypted packets from headend without first converting them to cleartext packets, in order to convert them into ciphertext packets with one or more layers of encryption.

Bartholet, on the other hand, discloses:

applying to the first ciphertext packet a first cryptographic algorithm to convert the first ciphertext packet to a second ciphertext packet (see, for example, [0012], lines 9-22, where at the storage system as one option the received encrypted packets are further encrypted and then stored);

applying to the second ciphertext packet a second cryptographic algorithm to convert the second ciphertext packet to a third ciphertext packet (see, for example, and [0022], where multi-layer encryption may be employed).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement the multi-layer encryption scheme taught by Bartholet in the system of Rabowsky to further encrypt the incoming ciphertext

packets one or more times to produce ciphertext packets with multiple layers of encryption because it would raise the cost of the known-plaintext attack.

Regarding claims 2, 15, 93, 94, 106 and 116, Rabowsky in view of Bartholet discloses:

wherein the receiver is remote from the headend and located at a subscriber location; and further including the step of: storing the third ciphertext packet at the subscriber location (see, for example, col. 1, lines 60-67; col. 8, lines 42-67).

Regarding claims 3, 40, and 84, Rabowsky in view of Bartholet discloses:

wherein the third ciphertext packet is stored in a device external to the receiver (see, for example, Fig. 2, storage media 78).

Regarding claims 4, 7, 27, 36, 37, 39 and 85, Rabowsky in view of Bartholet discloses:

wherein the third ciphertext packet is stored in an internal storage device of the receiver (see, for example, col. 10, lines 13-15).

Regarding claims 5, 35, 47 and 59, Bartholet discloses:

wherein the third ciphertext packet corresponds to a cleartext packet that has been encrypted by a 3DES algorithm (see, for example, page 94, Fig. 4.1(b), encryption operation).

Regarding claims 6 and 97, Rabowsky in view of Bartholet discloses:

wherein the first ciphertext packet includes encrypted content of a program distributed by the subscriber network (see, for example, col. 1, lines 467).

Regarding claims 7, 51, 61, 63, 70, 73, 75 and 78, Bartholet discloses:

applying a third cryptographic algorithm to the third ciphertext packet to convert the third ciphertext packet to a cleartext packet (see, for example, page 94, Fig. 4.1(b), decryption operation).

Regarding claims 8, 53, 65, 90, 103, 108, 113, 118 and 123, Rabowsky in view of Bartholet discloses:

converting the cleartext packet from a first format to a second format (see, for example, col. 2, lines 51-62; col. 3, line 9-15).

Regarding claims 9, 54, 66, 91, 104, 109, 114, 119 and 124, Rabowsky in view of Bartholet discloses:

wherein the first format is an MPEG format (see, for example, col. 4, lines 6-10).

Regarding claims 10, 18, 23, 30, 49, 52, 57, 64, 74, 76, 87, 89, 96, 102, 112 and 122, Rabowsky in view of Bartholet discloses:

wherein the third cryptographic algorithm is a 3DES algorithm (see, for example, col. 4, lines 20-32).

Regarding claims 11, 12, 31, 32, 33, 34, 43, 46, 60, 62, 71, 72, 79, 80, 86 and 98, Rabowsky in view of Bartholet discloses:

wherein the first cryptographic algorithm is a DES algorithm (see, for example, col. 4, lines 20-32).

Regarding claims 13 and 25, Bartholet discloses:

wherein the act of converting the first ciphertext packet to the second ciphertext packet removes a layer of encryption from the first ciphertext packet (see, for example, [0010]; [0011]; [0022]).

Regarding claims 14, 19 and 26, Bartholet discloses:

wherein the act of converting the second ciphertext packet to the third ciphertext packet adds a layer of encryption to the second ciphertext packet (see, for example, [0022]).

Regarding claims 15, 94 and 99, Rabowsky in view of Bartholet discloses:

receiving a first key from the headend, wherein the first key is applied to the first ciphertext packet with the first cryptographic algorithm (see, for example, col. 10, lines 7-11).

Regarding claims 16, 28 and 68, Rabowsky in view of Bartholet discloses:

generating an encryption key at the receiver, wherein the encryption key is applied to the second ciphertext packet with the second cryptographic algorithm (see, for example, col. 11, lines 47-53).

Regarding claims 17, 29, 67, 81, 82, 88, 95, 101, 107, 111, 117, and 121, Rabowsky in view of Bartholet discloses:

receiving at least one key associated with the first ciphertext packet; and applying a third cryptographic algorithm with the at least one key and the encrypt key to convert the third ciphertext packet to a cleartext packet (see, for example, Rabowsky, col. 9, line 65-col. 10, line 10; Bartholet, [0028] and [0029]).

Regarding claims 20 and 41, Rabowsky in view of Bartholet discloses:

generating at least one encryption key at the receiver, wherein the at least one encryption key is applied to the first ciphertext packet with the first cryptographic algorithm and the second ciphertext packet with the second cryptographic algorithm (see, for example, Rabowsky, col. 11, lines 47-53; Bartholet, [0010], [0028] and [0029]).

Regarding claims 21, 22, 41, 42, 44, 48 and 56, Rabowsky in view of Bartholet discloses:

wherein the at least one encryption key is a first encryption key and a second encryption key, the first encryption key is applied to the first ciphertext packet with the first cryptographic algorithm, and the second encryption key is applied to the second

ciphertext packet with the second cryptographic algorithm (see, for example, Bartholet, [0010], [0022], [0029] and [0035]).

Regarding claim 45, Rabowsky in view of Bartholet discloses:

wherein the cryptographic algorithm includes a first function and a second function, the first application of the cryptographic algorithm includes using the first function, and the second application of the cryptographic algorithm includes using the second function (see, for example, col. 4, lines 20-30).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdulhakim Nobahar whose telephone number is 571-272-3808. The examiner can normally be reached on M-T 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Application/Control Number:
10/015,351
Art Unit: 2132


Page 11

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abdulhakim Nobahar
Examiner
Art Unit 2132

a.n.

December 04, 07


Benjamin G. Lanier
Primary Examiner
AU 2132